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BIBLIOGRAPHY OF L SYSTEMS

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This bibliography is a continuation of previous bibliographies of L systems, prepared by Lee and Rozenberg. The last of these appeared in the book "Automata, Languages, Development" edited by Lindenmayer and Rozenberg, North-Holland, 1976. We have now updated the data given in the bibliography mentioned, as well as added all the new items (also unpublished ones) which have come to our knowledge. As in previous bibliographies, we have listed only the last one among the different versions of a paper.

A new feature in this bibliography is annotation. This seems well motivated in view of the rapid growth in number, as well as diversification in subject matter, characteristic for research papers in the L systems area. It now happens quite often that someone wants information only about, say, papers dealing with growth functions. For this purpose, we introduce a number of categories of subject matters. In connection with each paper listed, we indicate one or more categories. Some papers are rather difficult to classify in this way, and we are fully aware that in some cases our classification does not exhaust the whole content of a paper.

We do not explain here the terminology used in the theory of L systems but rather refer the reader to the book "Developmental Systems and Languages" by Herman and Rozenberg, or to the survey article "The Mathematical Theory of L Systems" by Rozenberg and Salomaa. In connection with some of the categories introduced below, we also mention some survey articles or papers otherwise suitable as an introductory reading material for that category.

We now describe the categories applied in the classification of papers, as well as our abbreviations used for them.

D0L, 0L, E0L, ET0L, IL

These five categories refer to the best known classes of L systems. Thus, the annotation "E0L" in connection with some paper means that the paper deals with E0L systems. The best introduction to all of these five categories is the book "Developmental Systems and Languages" by Herman and Rozenberg.

A: Applications to Biology

We include in this category all papers with a biological orientation. As an introduction we recommend the article by Lindenmayer in the book "Developmental Systems and Languages" by Herman and Rozenberg.

B: Bridges to Classical Formal Language Theory

Papers comparing L systems with traditional grammars, and to some extent also papers studying mainly problems typical for traditional formal language theory, belong to this category. Thus, B is attached to a paper if its main content is to compare some L classes with the variations of Chomsky hierarchy.

C: Complexity

Here we include the papers studying the complexity of algorithms for L systems, such as for example parsing algorithms.

D: Decision Problems

The name of this category should be self-explanatory.

E: Expository

Expository papers on the mathematical aspects of L systems will be marked with E_M, and those on biological aspects with E_B.

F: Forms

This category contains papers on L forms. A good starting point containing the basic definitions is the paper "E0L forms" by Maurer, Salomaa and Wood.

G: Growth Functions

Here we include papers discussing the lengths of the strings generated by some L systems. Thus, both growth functions and length set papers fall into this category. As an introduction, Sections III.7 and III.8 in the book "Automata-Theoretic Aspects of Formal Power Series" by Salomaa and Soittola, and the survey article "Growth functions associated with biological development" by Herman and Vitanyi are recommended.

H: Higher-Dimensional Systems

L systems working with dimensions $\geqslant 2$ form the subject matter of this category.

I: Iteration Grammars

Iteration grammars as a general framework for L systems, as well as the resulting generalizations such as hyper-AFL's and hyper-algebraic extensions of language families are included here.

M: Machine Models

This category contains papers discussing acceptors defining some classes of L languages.

P: Parallel Rewriting

Here we include mainly papers comparing L systems with other devices involving parallelism. Papers dealing only with such other devices are included in this bibliography only in exceptional cases.

R: Regulated Rewriting

Systems where a regulating or control device is applied in the rewriting process, such as a control mechanism for the use of the tables in an ET0L system or an E0L system with a control language, are the main contents of the papers in this category.

S: Squeezing Languages out of L Systems

One of the features very characteristic for L systems is the possibility of using different mechanisms for defining the language of the system. Such definitional mechanisms form the subject matter of this category.

V: Various Generalizations

We include here papers generalizing or applying L systems in a way that does not fit into the categories A, H and I.

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